MEASUREMENT TECHNOLOGIES

AMBIENT AIR AND METEOROLOGICAL MONITORING
FOR
TRUE GEOTHERMAL ENERGY COMPANY
KILAUEA MIDDLE EAST RIFT ZONE, ISLAND OF HAWAII
MARCH 1990 DATA REPORT

Submitted to:

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True Geothermal Energy Company

Prepared by:

MEASUREMENT TECHNOLOGIES

May 1990

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1.0 Introduction

Measurement Technologies has been contracted by True Geothermal Energy Company to conduct an air quality and meteorological monitoring program to support incremental exploration and development of the Kilauea Middle East Rift Zone Geothermal Resources Subzone (GRS), Puna District, Island of Hawaii. The data gathered in the monitoring program is being used in support of the exploration and possible development of the geothermal resource.

The monitoring program consists of two (2) monitoring sites. The first site (Site 1) is located in the Kaohe Homesteads area and the second site (Site 2) is located at the geothermal drilling and staging area D-1. The monitored parameters for each site are contained in Table 1-1. The sites are being operated consistent with the guidelines and requirements as outlined in the following documents:

- "Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)," U.S. EPA-450/4-80-012, November 1980.
- "Quality Assurance Handbook for Air Pollution Measurement Systems: Volume IV. Meteorological Measurements," U.S. EPA-600/4-82-060, February 1983.
- "Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II," Ambient Air Specific Methods, U.S. EPA-600/4-77-027a, May 1977.

As part of the monitoring program, Measurement will submit monthly and quarterly reports to True Geothermal Energy Company. The reports will contain the monitoring data, results of the quarterly quality assurance audits and results of quality control activities such as SO2 and H2S gas analyzer precision checks, level 1 and 2 checks and multipoint calibration results.

TABLE 1-1 Monitored Parameters

PARAMETER	SITE 1	SITE 2 (MET)
HYDROGEN SULFIDE (H2S)	X	8 PLS
SULFUR DIOXIDE (SO2)	X	
WIND DIRECTION	X	X
WIND SPEED	X	X
VERTICAL WINDS		X
SIGMA THETA	X	X
SIGMA W		X
TEMPERATURE	X	
PRECIPITATION	X	
RAIN WATER (ANIONS & DISSOLVED METALS)	3 PLS	
METALS (ATMOSPHERIC PARTICULATE)	X	
TOTAL SUSPENDED PARTICULATES (TSP)	X	
INHALEABLE PARTICULATES (PM-10)	X	
RADON		X

Section 2.0 of this report contains a operations narrative of significant events and activities that occurred during the month of March. Section 3.0 of this report contains the data collected during the month with graphical presentations and data capture summaries. The data is presented by site numbers and may also be referred to by name. Site 1 and 2 names are Air Quality/Met and Met Site, respectively.

2.0 Operations Summary

This section discusses the operations of the two monitoring sites and any significant events that may affect data quality. A downtime summary is also provided.

2.1 Monthly Operations Summary

Site 1 operations were routine for the month of March. Rain water samples for the period 3/16-30/90 had to be combined with samples taken in the period 4/1-16/90. The samples had to be combined because there was an insufficient amount of sample to run the analysis at the detection limit required. Results of the analysis are shown in Tables 3-8 and 3-9. There were no significant levels of compounds or metals detected in the samples.

The metals filter analyses loadings and the particulate filter loadings for the month of March show insignificant concentrations and loadings for the compounds of interest in the program.

The continuous H2S and SO2 analyzers at Site 1 detected no SO2 or H2S levels during March. No levels of H2S were noted on the hydrogen sulfide dosimeters located around the Site 2 drill area.

2.2 Downtime Summary

This section presents the down time summary by site. Down time is considered any time an analyzer or sensor is not collecting valid data. Down time includes calibration time, data lost due to data validation criteria such as insufficient data samples, sensors or analyzers operating outside of allowable limits, etc. Calibration and audit time and time lost due to maintenance and malfunctions is also considered down time.

Data capture at Site 1 was excellent in March, with all parameters exceeding 95 percent data capture. Site 2 lost 171 hours of data for the period starting at 1300 hours on 3/16/90 to 1700 hours on 3/23/90, due to a data system malfunction which appears to be related to the storage cartridge. Data capture as a result was 77 percent for all parameters at Site 2 during March. Data capture for February and April approached 100 percent for all parameters, therefore, the site is averaging above 90 percent data capture for the program which is very good on battery operated systems of this type. Although the data capture is acceptable for PSD monitoring guidelines, Measurement is still investigating the possibility of installing a portable terminal and printer at this site to help reduce the data loss caused by problems of this type.

2.3 Major Activities

No major activities took place in the month of March.

3.0 Data Summary

Section 3.0 contains monthly summary reports and statistic tables for all of the major monitored parameters. In addition, graphical wind rose plots, rain water analyses results, total suspended (TSP) and inhaleable (PM-10) particulate loading and metals analyses are also contained in this section. The data and associated graphical presentations are presented by site. Each sites data is organized and presented as follows:

- Monthly Summary Report containing the hourly values for each day of the month. Dashes contained in the place of any data signifies that the data falls into a down time category previously discussed in Section 2.0. An asterisk sign in the wind sigma theta signifies calm wind conditions.

- A graphical wind rose presentation will immediately follow the Monthly Summary Report. The wind rose displays a graphical presentation of the wind speed and direction at each site.

- Summary Statistic Tables containing the highest and second highest measured values, lowest value, arithmetic mean and standard deviation, data recovery rates and percentile breakdowns of measured values.

- TSP and PM-10 particulate data showing loading of each filter along with the elemental analyses of each metals filter (Site 1 only).

- Rain water analyses results showing each sample collected and the results of the metals elemental and anion analyses (Site 1 only).

3.1 Air Quality/Meteorological Monitoring Data Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 AQM TRUE WD (DEG) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	309	315	175	319	334	327	325	324	337	335	335	336	335	341	341	351	89	329	317	307	315	339	342	341
2	340	336	340	335	333	330	330	330	333	329	334	343	351	352	347	353	351	350	348	350	342	337	350	349
3	335	345	357	348	349	345	349	349	353	354	353	352	358	344	342	345	352	344	340	343	339	334	336	343
4	346	342	343	341	340	342	336	332	339	349	341	2	355	352	356	355	351	348	345	332	329	340	334	331
5	332	331	330	327	322	324	326	336	348	338	336	339	348	343	346	351	346	342	348	336	332	313	299	300
6	300	313	313	318	316	327	329	327	343	345	353	351	0	356	107	88	110	77	90	354	105	105	26	357
7	343	347	337	334	341	340	336	340	346	1	359	351	352	354	352	352	3	354	4	17	17	359	13	10
8	28	20	348	353	0	353	350	353	8	355	359	30	20	6	21	67	63	8	12	8	345	333	329	334
9	328	332	344	319	325	322	321	328	339	1	37	101	119	104	116	109	118	46	332	331	303	302	298	303
10	279	300	304	0	8	11	90	296	337	109	127	0	180	160	125	120	134	133	123	114	119	122	108	122
11	110	120	107	63	128	104	62	29	45	90	108	79	96	23	81	7	44	357	348	348	354	346	347	19
12	349	340	342	344	347	346	334	353	347	14	14	55	26	58	40	17	21	4	353	332	326	342	319	274
13	296	290	302	289	319	262	262	290	316	130	115	105	124	123	124	113	114	114	93	325	126	139	140	0
14	0	0	0	253	178	0	270	236	335	137	124	126	125	127	125	128	139	155	199	200	0	180	224	0
15	206	0	0	0	218	213	246	256	316	----	347	351	351	343	350	343	345	343	342	342	342	336	334	335
16	338	341	334	331	226	320	320	321	321	330	336	345	343	346	352	346	347	348	336	327	326	325	321	316
17	326	317	311	313	303	296	288	315	341	342	346	346	358	356	350	352	351	353	349	323	307	296	303	301
18	302	293	296	290	280	275	259	303	339	359	2	359	11	89	85	83	25	4	19	53	0	0	0	0
19	252	202	184	180	192	182	248	190	90	160	120	124	124	128	128	126	152	123	252	219	283	181	172	196
20	198	189	220	202	231	245	0	194	155	157	189	153	146	172	170	165	177	185	180	270	281	270	234	232
21	231	226	216	253	0	174	0	132	132	122	124	129	140	129	131	142	157	119	113	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	124	119	122	125	116	113	120	97	9	347	328	318	307	297
23	279	270	293	298	279	279	284	299	335	345	351	360	5	123	128	127	118	113	122	0	189	283	277	0
24	239	186	0	262	254	275	271	311	7	55	356	86	107	115	114	127	126	122	128	164	0	191	291	192
25	267	273	261	270	307	270	275	127	133	127	127	129	129	121	124	122	108	75	141	0	131	342	269	172
26	188	0	325	319	320	304	302	341	346	353	2	4	3	2	5	357	354	353	351	341	327	327	329	326
27	319	315	320	320	322	318	319	330	339	345	1	8	6	23	356	358	7	3	353	343	344	347	346	339
28	328	319	314	314	309	310	297	299	347	17	4	9	4	7	1	359	355	354	351	350	347	353	354	353
29	351	348	349	348	350	336	330	326	335	344	346	350	351	355	353	350	351	351	347	348	350	351	342	337
30	330	336	337	329	335	330	329	336	342	348	346	347	349	349	349	350	351	345	339	337	334	332	334	328
31	331	319	342	333	330	334	333	336	341	349	10	9	359	0	359	354	354	354	351	344	333	338	332	330

Table 3-1. Wind Direction Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 AQM TRUE WS (MPH) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.6	1.0	1.4	3.0	5.0	4.3	7.8	9.3	10.9	13.3	12.8	12.2	11.0	10.2	7.4	4.9	1.1	3.0	2.4	2.0	2.9	6.4	6.1	5.6
2	7.2	9.4	8.8	10.8	8.7	9.7	9.9	8.9	7.7	8.4	8.7	8.4	9.0	9.1	9.4	8.1	9.0	8.6	8.0	7.1	8.0	7.4	7.1	6.5
3	6.0	5.6	3.1	3.3	4.7	3.5	4.5	5.3	6.9	7.6	6.4	6.4	5.0	6.8	8.1	7.1	7.0	5.7	4.2	4.2	3.7	3.4	3.7	3.7
4	4.4	3.8	5.3	6.1	6.6	6.1	6.0	6.0	5.1	5.5	5.1	3.7	5.1	4.0	4.2	3.8	3.6	3.6	4.2	4.4	5.3	4.8	4.8	3.8
5	4.0	3.9	4.4	5.0	5.4	5.6	5.5	5.7	5.6	7.1	7.7	6.9	4.7	6.3	5.7	3.9	4.3	4.6	4.0	3.7	3.0	2.9	1.1	0.7
6	1.3	2.2	4.0	2.7	3.6	5.0	5.8	5.6	4.9	4.0	2.6	3.8	2.1	3.0	2.0	1.6	2.4	1.2	0.9	1.4	1.7	1.7	0.6	0.6
7	1.6	3.3	4.5	4.9	4.0	4.5	3.5	3.8	2.5	2.7	3.0	3.8	4.3	4.2	3.2	4.6	3.1	3.6	2.3	1.9	1.5	2.2	1.1	1.0
8	1.2	0.7	1.7	2.9	1.8	3.0	2.7	2.5	1.3	2.7	3.2	2.0	2.0	2.6	1.8	2.0	1.3	1.4	0.9	0.7	1.1	2.1	2.7	4.1
9	2.2	3.1	2.9	3.1	3.0	2.1	3.5	3.0	2.1	1.6	1.0	1.4	2.3	1.9	1.7	1.6	1.5	0.3	0.2	1.5	0.7	0.6	0.2	1.2
10	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	1.3	1.2	0.7	0.8	0.8	1.0	1.1	1.0
11	0.6	1.0	0.7	0.3	0.6	0.2	0.0	0.1	0.2	0.0	0.2	0.4	0.2	0.2	0.1	0.2	0.5	1.5	1.4	1.6	0.7	0.7	1.6	0.4
12	0.5	0.9	0.7	0.9	0.4	0.6	0.5	0.3	0.8	0.5	0.7	0.7	1.0	1.8	1.8	2.3	2.0	2.4	1.6	2.0	1.6	0.8	0.2	0.0
13	0.3	0.1	0.3	0.0	0.0	0.2	0.1	0.3	0.1	0.4	1.9	2.4	2.6	3.0	3.3	2.5	1.6	2.0	0.4	0.2	0.1	0.9	0.1	0.0
14	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.8	0.1	1.3	2.0	3.0	3.7	3.8	2.9	2.1	0.9	0.1	0.2	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.2	2.1	----	6.9	6.6	8.0	8.8	8.6	10.2	9.7	9.8	9.6	8.9	7.3	8.3	7.6	7.2
16	7.0	6.3	6.2	5.8	4.6	3.3	3.1	5.0	4.9	4.7	7.6	8.0	8.4	6.9	6.8	7.2	6.4	6.4	6.5	5.6	4.9	4.4	4.0	3.5
17	3.4	3.4	3.7	2.2	1.5	0.5	0.4	1.2	4.8	6.9	6.4	6.4	4.6	4.8	5.9	5.7	6.3	5.3	4.0	2.9	1.5	0.7	1.6	0.8
18	1.3	0.5	0.7	0.3	0.1	0.1	0.6	0.1	1.4	0.4	2.3	3.5	2.1	1.9	1.5	1.4	1.0	1.3	0.2	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.4	2.1	3.8	3.3	4.0	2.9	2.4	0.8	0.5	0.3	0.1	0.3	0.1	0.2	0.2
20	0.1	0.0	0.1	0.1	0.6	0.0	0.0	0.1	1.2	1.8	0.9	2.0	3.0	2.9	2.3	1.8	1.4	0.4	0.0	0.0	0.1	0.0	0.1	0.1
21	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.1	1.3	2.1	3.1	3.3	3.6	3.4	3.8	2.6	1.5	1.6	0.9	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.9	3.9	4.3	3.1	2.7	2.0	0.9	0.5	0.6	0.1	0.9	0.5	0.1
23	0.1	0.0	0.6	0.7	0.4	0.6	0.5	1.1	4.5	4.4	2.8	2.7	1.9	2.7	3.6	3.2	2.5	2.0	0.9	0.0	0.0	0.1	0.1	0.0
24	0.0	0.1	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.9	2.0	1.2	2.5	3.0	3.3	3.7	2.8	2.3	0.6	0.0	0.0	0.0	0.1	0.0
25	0.1	0.1	0.0	0.0	0.1	0.0	0.6	0.0	1.3	2.7	2.7	3.1	2.4	3.4	2.7	2.9	1.5	0.6	0.1	0.0	0.5	0.6	0.5	0.1
26	0.1	0.0	0.6	1.1	3.2	1.0	0.2	0.8	2.3	1.1	1.4	2.8	3.4	3.6	3.2	3.0	4.0	4.7	3.7	3.4	3.7	3.9	4.6	4.5
27	4.3	3.8	4.2	4.4	4.0	3.6	4.3	4.9	6.1	5.1	2.9	2.4	2.1	2.2	3.1	3.4	2.9	3.0	3.1	3.4	4.2	3.9	3.8	4.1
28	3.3	3.2	2.3	2.2	2.3	1.9	1.2	1.1	2.4	1.8	2.8	2.7	3.4	2.9	3.4	3.8	4.3	5.7	5.4	4.9	3.7	4.4	2.8	4.6
29	4.3	4.5	4.2	5.5	5.7	5.8	4.9	5.5	6.8	6.5	5.0	6.0	6.2	6.0	6.1	6.8	7.1	6.6	5.9	6.0	6.2	5.7	5.2	5.6
30	7.2	5.3	6.3	6.0	5.3	5.8	5.9	6.0	6.1	7.4	8.1	8.1	7.9	8.7	8.5	8.5	7.2	8.1	7.3	6.2	6.2	5.5	5.3	4.9
31	4.7	4.7	4.1	5.5	6.3	5.4	5.1	5.5	5.1	4.3	3.2	3.1	3.3	3.4	4.0	4.2	4.7	4.7	5.2	5.6	5.8	5.1	5.0	4.0

Table 3-2. Wind Speed Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 AQM TRUE Sigθ1 (deg) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	62.5	52.5	48.3	34.6	21.2	21.4	20.7	26.0	21.6	20.1	20.3	18.2	19.1	21.3	22.0	32.5	75.2	35.0	22.9	35.8	21.3	20.9	19.7	18.6
2	20.4	19.2	21.2	19.6	18.1	17.4	16.3	17.0	19.7	18.0	18.1	22.3	30.3	31.9	31.7	23.4	31.5	28.0	23.7	26.0	20.5	18.7	27.4	27.6
3	30.4	36.4	57.0	34.8	25.7	27.4	31.7	33.6	40.0	36.9	45.0	44.5	55.4	25.9	27.3	24.7	30.1	24.2	20.3	20.9	22.3	19.0	19.8	20.3
4	22.7	31.2	20.2	19.2	19.6	22.5	17.9	18.0	19.2	33.0	25.7	57.2	51.6	57.3	56.4	56.1	59.1	39.9	27.1	21.9	19.2	20.1	19.7	24.2
5	16.4	17.0	16.0	15.9	15.2	14.6	15.2	19.2	25.4	19.7	19.6	24.3	39.7	23.8	35.8	51.2	28.0	21.2	30.4	44.8	23.1	27.5	37.7	64.8
6	50.6	43.2	21.5	23.6	16.1	16.5	16.5	16.1	23.5	33.7	57.1	48.2	68.6	57.1	74.5	77.0	66.5	75.4	71.3	69.6	72.4	69.7	71.4	56.4
7	46.8	29.8	20.7	19.0	28.1	29.8	44.1	23.1	41.1	65.2	58.7	50.6	44.3	46.5	47.7	37.2	66.0	61.9	68.4	67.7	69.1	73.0	76.5	65.3
8	73.0	74.0	54.9	48.2	72.9	45.6	56.2	54.8	81.1	54.0	58.0	78.4	76.1	69.6	84.4	79.4	79.8	72.8	76.7	64.6	41.7	16.0	17.7	17.5
9	20.9	21.3	21.8	17.9	19.3	28.5	17.5	39.6	30.9	58.2	75.7	69.5	60.5	72.6	70.6	81.7	58.7	80.6	51.2	19.7	32.0	42.2	89.4	50.4
10	51.2	72.5	67.3	****	88.0	60.9	88.7	88.2	72.1	77.2	62.0	****	77.4	69.3	54.3	65.7	53.2	68.1	60.4	69.2	81.7	66.6	64.7	55.3
11	67.7	54.2	69.3	71.4	59.2	72.4	88.0	90.5	82.0	92.6	73.0	87.6	80.8	85.5	85.6	80.1	73.5	57.5	45.5	41.0	58.6	40.6	34.2	88.5
12	67.0	34.7	22.6	25.8	32.3	32.0	25.8	39.9	32.9	71.7	63.1	79.8	81.1	80.0	77.3	73.1	73.5	62.0	52.5	19.0	18.6	40.4	80.7	70.7
13	57.6	63.8	49.9	****	****	72.8	58.3	68.4	86.0	83.1	35.2	60.6	53.1	51.0	49.5	61.6	68.7	58.2	71.4	56.0	****	22.0	69.1	97.6
14	97.6	97.6	97.6	72.1	80.5	97.6	****	76.9	28.1	80.0	62.6	65.5	50.3	42.9	48.2	60.3	62.0	74.3	79.7	53.4	97.6	74.8	92.8	97.6
15	30.1	97.6	97.6	97.6	30.2	30.1	42.7	58.2	31.8	----	29.2	38.9	37.2	22.7	28.0	23.6	23.6	22.9	22.9	23.6	22.1	19.1	19.8	18.6
16	19.0	20.1	18.8	17.7	16.1	18.1	18.7	17.9	18.0	19.9	19.2	25.3	23.8	29.8	32.4	25.4	25.1	24.5	17.4	15.5	16.9	15.4	15.5	17.0
17	18.0	16.6	20.1	29.3	27.4	37.2	62.5	70.8	24.9	27.5	32.4	35.3	50.4	49.9	41.9	34.4	27.1	31.8	25.2	16.6	34.6	46.5	29.0	38.4
18	23.4	36.4	37.4	45.0	49.3	42.3	49.4	74.5	40.6	70.6	52.2	50.1	59.1	72.4	81.8	75.1	78.1	55.1	75.6	68.8	97.6	97.6	****	97.6
19	81.2	60.5	57.0	****	74.7	76.3	95.3	****	****	72.6	32.8	40.5	60.2	52.8	61.9	66.6	75.6	71.2	64.4	90.7	69.0	88.8	39.7	62.9
20	64.0	72.0	88.3	62.1	59.5	57.3	****	84.4	57.0	64.9	83.4	70.9	62.6	63.1	73.0	73.0	73.4	73.9	****	86.7	79.1	52.0	71.9	37.1
21	25.2	27.3	47.1	****	97.6	****	97.6	86.3	34.7	50.7	47.6	52.3	50.0	57.6	51.1	61.5	71.5	58.8	47.1	97.6	****	97.6	97.6	97.6
22	97.6	97.6	97.6	97.6	97.6	97.6	97.6	97.6	86.6	99.4	55.9	54.4	49.3	45.4	54.3	53.7	59.9	64.0	58.4	27.5	17.0	18.1	18.3	45.4
23	46.6	97.0	26.4	25.6	34.4	33.4	34.5	31.2	19.0	29.3	50.3	60.0	71.4	60.5	49.5	52.0	56.6	56.4	55.4	97.6	77.9	97.7	76.7	****
24	98.3	71.9	97.6	****	73.0	89.4	54.2	90.0	76.2	72.6	54.7	81.8	63.7	61.6	54.5	49.5	52.0	47.1	89.9	****	97.6	****	****	****
25	73.6	****	88.5	81.8	91.1	****	47.0	93.9	49.0	39.1	56.2	49.8	63.7	51.1	54.3	46.3	58.7	75.7	****	90.1	40.6	51.4	63.5	98.1
26	****	97.6	99.4	33.0	16.3	28.2	35.1	34.8	45.6	46.8	73.0	62.2	57.6	57.0	64.8	63.0	50.4	35.2	27.9	20.2	15.2	15.5	15.9	15.4
27	14.7	18.0	15.8	15.5	16.1	16.6	16.9	16.1	22.6	32.4	59.8	73.2	75.6	69.1	65.2	59.7	59.4	54.0	40.7	19.7	20.5	24.3	22.5	17.5
28	15.8	16.8	25.1	26.5	33.9	31.7	31.8	45.5	33.6	71.0	57.1	65.9	62.0	67.4	59.4	52.5	51.2	31.3	33.7	35.2	45.2	34.2	47.7	42.1
29	47.9	40.4	37.2	27.9	29.8	20.9	17.2	15.4	16.8	19.7	39.7	36.7	37.1	42.9	35.9	33.4	28.9	30.3	23.4	25.8	26.8	25.9	19.6	19.1
30	17.1	18.7	18.2	16.8	18.7	16.4	16.4	18.3	19.7	23.2	29.3	31.4	33.4	32.9	31.8	32.8	31.4	21.9	19.8	18.0	18.3	18.2	19.3	17.2
31	42.6	20.7	37.9	22.0	18.3	19.1	17.7	20.2	38.9	52.2	63.5	66.2	63.7	62.4	57.1	52.1	44.3	44.0	24.8	20.7	17.6	18.3	16.8	16.4

Table 3-3. Sigma Theta Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 AQM TRUE TEMP (DEG F) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	63	62	62	62	62	61	61	60	59	58	59	59	59	59	58	59	60	59	59	58	58	59	59	59
2	59	59	59	58	58	57	57	58	59	60	61	63	65	66	67	66	66	65	64	63	62	61	63	62
3	59	61	61	60	61	61	61	63	66	68	68	69	67	65	65	63	65	63	62	62	62	62	63	63
4	63	62	62	62	61	61	61	61	62	65	63	67	68	68	67	67	66	65	64	63	63	63	63	63
5	63	63	63	62	62	62	62	62	62	62	63	63	64	64	65	65	64	64	64	64	64	64	63	63
6	63	63	63	64	63	63	63	64	67	68	69	71	72	69	70	69	69	69	67	65	66	66	66	65
7	65	65	64	64	64	63	63	63	65	68	68	69	68	68	67	67	65	64	64	64	64	64	64	64
8	64	64	64	64	64	64	64	64	65	65	67	68	67	67	66	66	65	65	64	64	64	63	63	63
9	63	63	63	63	63	63	63	63	64	66	66	68	68	69	68	68	67	66	65	64	64	64	64	64
10	64	64	64	64	64	65	65	65	68	68	69	70	70	69	69	69	67	66	66	64	65	65	65	65
11	65	65	64	65	65	64	64	65	66	67	68	69	70	70	71	70	70	70	65	65	64	64	64	64
12	64	64	64	64	64	64	64	64	66	69	70	72	73	73	73	72	72	70	66	64	64	64	63	63
13	63	63	64	63	63	63	63	66	68	70	71	73	74	73	72	72	71	69	67	65	64	64	63	62
14	61	60	60	59	59	58	58	62	71	73	73	74	74	74	74	74	74	75	67	65	63	62	61	61
15	61	61	60	59	58	58	58	59	69	----	72	73	72	67	68	64	63	62	62	61	61	61	60	60
16	61	60	60	60	60	60	60	60	60	61	62	65	68	68	66	66	65	64	62	61	61	61	61	61
17	61	61	60	60	60	59	59	63	68	68	69	70	71	71	70	68	67	65	64	63	62	61	61	61
18	61	61	61	61	61	61	61	63	68	68	70	70	72	72	71	69	68	66	65	63	63	63	62	62
19	62	61	61	61	61	61	61	62	66	68	68	71	73	73	73	71	68	67	65	64	64	64	64	64
20	64	64	64	64	64	63	63	65	72	73	74	74	76	76	76	74	71	71	69	67	65	64	64	62
21	62	62	61	62	62	62	63	65	68	72	74	75	76	76	76	75	73	71	68	66	65	64	64	64
22	65	65	65	64	64	63	64	65	68	72	75	76	76	76	76	74	72	71	69	66	65	65	64	64
23	63	62	62	62	61	61	61	63	70	70	72	74	75	76	76	76	75	73	69	65	64	65	64	63
24	63	63	63	63	63	63	64	64	70	71	70	72	74	75	74	75	76	72	66	64	64	64	64	64
25	64	64	64	63	64	64	64	66	70	70	72	74	73	73	75	73	72	69	68	67	67	67	66	66
26	65	65	65	65	64	63	64	68	71	72	75	76	75	76	76	75	75	72	67	66	65	65	64	64
27	63	63	64	64	63	63	63	68	70	72	75	76	76	77	75	76	73	71	68	66	66	66	65	65
28	64	64	64	64	63	62	62	63	70	72	74	77	76	76	75	74	73	70	67	65	64	64	64	65
29	64	63	63	63	62	61	61	62	65	66	69	71	71	71	69	68	67	65	64	63	63	62	61	61
30	60	60	61	60	60	60	60	61	63	66	69	71	71	71	68	68	64	63	62	62	62	61	62	61
31	61	60	61	60	60	60	61	63	66	69	71	71	72	72	71	69	68	65	64	64	63	62	62	62

Table 3-4. Ambient Temperature Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 AQM TRUE RAIN (INCH) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.10	0.08	0.05	0.01	0.00	0.06	0.05	0.32	0.25	0.28	0.32	0.16	0.10	0.14	0.12	0.13	0.03	0.00	0.00	0.00	0.01	0.01	0.03	0.01
2	0.03	0.08	0.07	0.03	0.09	0.01	0.01	0.04	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
3	0.07	0.15	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.04	0.03	0.06	0.04	0.01	0.06	0.08	0.01	0.00	0.02	0.01	0.01	0.00	0.00	0.04
6	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.18	0.02	0.01	0.01	0.00	0.13	0.15	0.23	0.02	0.00	0.01
7	0.18	0.00	0.00	0.00	0.05	0.02	0.11	0.02	0.01	0.00	0.00	0.01	0.03	0.03	0.00	0.12	0.09	0.07	0.20	0.16	0.07	0.12	0.02	0.06
8	0.08	0.04	0.02	0.13	0.00	0.10	0.05	0.01	0.00	0.00	0.00	0.10	0.03	0.09	0.03	0.09	0.01	0.02	0.00	0.01	0.00	0.00	0.00	0.00
9	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.04	0.02	0.05	0.08	0.00	0.00	0.00	0.01	0.00	0.00	0.05	0.00	0.02	0.00	0.00	0.02	0.00
10	0.00	0.03	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.12	0.03	0.03	0.00	0.00	0.01	0.00	0.05	0.05	0.09	0.10	0.16	0.16	0.11	0.04
11	0.03	0.00	0.15	0.16	0.06	0.04	0.03	0.01	0.02	0.03	0.00	0.08	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.11	0.01
12	0.00	0.01	0.00	0.00	0.03	0.00	0.05	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
13	0.00	0.00	0.05	0.00	0.00	0.05	0.06	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	----	0.00	0.00	0.00	0.00	0.00	0.07	0.08	0.11	0.08	0.04	0.07	0.02	0.04	0.02
16	0.04	0.05	0.04	0.03	0.02	0.00	0.02	0.04	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.02	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
26	0.00	0.00	0.02	0.16	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.10	0.00	0.00	0.07
29	0.04	0.14	0.00	0.10	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.02	0.00	0.01	0.01
31	0.01	0.04	0.17	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 3-5. Precipitation Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 AQM TRUE SO2 (PPB) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	----	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	----	----	----	----	----	----	----	----	----	----	----	0	0	0
22	0	0	0	0	0	0	0	0	----	----	----	----	----	----	----	----	----	----	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	----	----	----	----	0	0	0	0	0	----	0	0	0	0	0
24	0	0	0	0	0	0	0	0	----	----	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	----	----	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3-6. Sulfur Dioxide Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 AQM TRUE H2S (PPB) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	----	----	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	----	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	----	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3-7. Hydrogen Sulfide Monthly Summary Site 1

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-000

HECO ENVIRONMENTAL LABORATORY
ENVIRONMENTAL DEPARTMENT
Rainwater Analysis Report

Report Date: May 1, 1990

Site: True/Geothermal
Pahoa, Hawaii

Sample Date: March 15, 1990
(All 4 samples collected
from 3/1/90 - 3/15/90

Parameter	Concentration (ug/L) True 1-6	True 2-6	True 3-6	True 4-6
pH	5.30	5.20	5.05	5.00
Aluminum	<10.0	<10.0	<10.0	<10.0
Arsenic	<5.0	<5.0	<5.0	<5.0
Barium	<20.0	<20.0	<20.0	<20.0
Cadmium	<1.0	<1.0	<1.0	<1.0
Chromium	<4.0	<4.0	<4.0	<4.0
Copper	<10.0	<10.0	<10.0	<10.0
Iron	<10.0	26.4	24.4	<10.0
Lead	<5.0	<5.0	<5.0	<5.0
Magnesium	800	795	795	745
Manganese	<2.0	<2.0	<2.0	<2.0
Mercury	<0.50	<0.50	<0.50	<0.50
Selenium	<5.0	<5.0	<5.0	<5.0
Silver	<2.0	<2.0	<2.0	<2.0
Sodium	6,270	6,260	6,240	6,100
Zinc	<10.0	<10.0	<10.0	<10.0
Bromide	<50	<50	<50	<50
Chloride	10,600	8,810	10,500	9,290
Fluoride	29	27	28	28
Phosphate	<61	<61	<61	<61
Nitrite	<4	<4	<4	<4
Nitrate	<13	<13	<13	41
Sulfate	1,970	1,760	1,850	1,850
Sulfite	<150	<150	<150	<150

Analyzed by: CK DK C. Kishimoto/G. Kitsuwa

Approved by: George Yasutome
Senior Chemist

Table 3-8. Rain Water Analyses Monthly Summary Site 1
03/01/1990 - 03/15/1990

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu HI 96840-000

HECO ENVIRONMENTAL LABORATORY
ENVIRONMENTAL DEPARTMENT
Rainwater Analysis Report

Report Date: May 1, 1990

Site: True/Geothermal
Panoa, Hawaii

Sample Date: March 31, 1990(3/16/90-3/31/90)
April 16, 1990(4/1/90-4/16/90)

Parameter	Concentration (ug/l) True 1-7/1-8*	True 2-7/2-8*	True 3-7/3-8*	% Recovery True 2-7/2-8*
pH	4.60(True 1-7) 5.10(True 1-8)	4.60(True 2-7) 4.50(True 2-8)	4.55(True 3-7) 4.50(True 3-8)	
Aluminum	32.0	26.0	28.1	90.5
Arsenic	<5.0	<5.0	<5.0	83.8
Barium	<20.0	<20.0	<20.0	111.8
Cadmium	<1.0	<1.0	<1.0	88.0
Chromium	<4.0	<4.0	<4.0	88.8
Copper	<10.0	<10.0	<10.0	96.5
Iron	17.4	14.6	16.3	94.0
Lead	<5.0	<5.0	<5.0	86.5
Magnesium	450	440	460	86.2
Manganese	<2.0	<2.0	<2.0	103.8
Mercury	<0.50	<0.50	<0.50	94.0**
Selenium	<5.0	<5.0	<5.0	98.5
Silver	<2.0	<2.0	<2.0	98.5
Sodium	3,570	3,580	3,730	87.5
Zinc	<10.0	<10.0	<10.0	112.5
Bromide	<50	<50	<50	
Chloride	6,160	5,180	5,720	
Fluoride	34	56	33	134.9
Phosphate	<61	<61	<61	
Nitrite	<4	<4	<4	
Nitrate	<13	<13	<13	107.2
Sulfate	1,970	2,170	2,300	88.4
Sulfite	<150	<150	<150	

*Composite of samples collected from 3/16/90 to 4/16/90.
**Due to insufficient sample, spike was done on Sample No. 2-6, collected on 3/1/90 to 3/15/90.

Analyzed by: CK DK C. Kishimoto/G. Kitsuwa

Approved by: _____
George Yasutome
Senior Chemist

Table 3-9. Rain Water Analyses Monthly Summary
03/16/90 - 04/16/90

295/01-005 PROTOCOL: 5 SA

SAMPLE ID: MZ156
PARTICLE SIZE: C
ANALYSIS ID: MZ156
03/06/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 0.-- 10.. MICROGRAMS

ELEMENT	UG/CM2		UG/FILTER	
AL	.0000+-	.0046	.000+-	.059
SI	.0000+-	.0026	.000+-	.033
P	.0000+-	.0032	.000+-	.041
S	.0000+-	.0107	.000+-	.137
CL	.2784+-	.0329	3.564+-	.421
K	.0410+-	.0055	.525+-	.070
CA	.0141+-	.0024	.180+-	.031
TI	.0012+-	.0008	.015+-	.010
V	.0005+-	.0005	.006+-	.006
CR	.0000+-	.0005	.000+-	.006
MN	.0001+-	.0007	.001+-	.009
FE	.0147+-	.0015	.188+-	.019
NI	.0012+-	.0005	.015+-	.006
CU	.0031+-	.0005	.040+-	.006
ZN	.0005+-	.0004	.006+-	.005
GA	.0000+-	.0004	.000+-	.005
AS	.0001+-	.0013	.001+-	.017
SE	.0000+-	.0005	.000+-	.006
BR	.0005+-	.0006	.006+-	.008
RB	.0000+-	.0008	.000+-	.010
SR	.0000+-	.0009	.000+-	.012
Y	.0002+-	.0011	.003+-	.014
ZR	.0000+-	.0026	.000+-	.033
MO	.0041+-	.0049	.052+-	.063
PD	.0000+-	.0031	.000+-	.040
AG	.0000+-	.0043	.000+-	.055
CD	.0000+-	.0058	.000+-	.074
IN	.0000+-	.0062	.000+-	.079
SN	.0097+-	.0077	.124+-	.099
SB	.0029+-	.0138	.037+-	.177
BA	.0000+-	.0578	.000+-	.740
LA	.0017+-	.0607	.022+-	.777
HG	.0002+-	.0011	.003+-	.014
PB	.0011+-	.0022	.014+-	.028

Table 3-10. Metals Filter Analyses March 6, 1990 Site 1

295/01-005 PROTOCOL: 5 SA

SAMPLE ID: MZ157
PARTICLE SIZE: C
ANALYSIS ID: MZ157
03/12/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 11.+- 10. MICROGRAMS

ELEMENT	UG/CM2		UG/FILTER		PERCENT	
AL	.0000	.0043	.000	.055	.0000	.5004
SI	.0000	.0025	.000	.032	.0000	.2909
P	.0000	.0030	.000	.038	.0000	.3491
S	.0252	.0092	.323	.118	2.9324	2.8727
CL	.3309	.0386	4.236	.494	38.5047	35.2913
K	.0105	.0024	.134	.031	1.2218	1.1453
CA	.0084	.0017	.108	.022	.9775	.9103
TI	.0002	.0007	.003	.009	.0233	.0842
V	.0001	.0005	.001	.006	.0116	.0591
CR	.0002	.0005	.003	.006	.0233	.0619
MN	.0000	.0006	.000	.008	.0000	.0698
FE	.0150	.0014	.192	.018	1.7455	1.5951
NI	.0000	.0005	.000	.006	.0000	.0582
CU	.0039	.0005	.050	.006	.4538	.4166
ZN	.0004	.0004	.005	.005	.0465	.0629
GA	.0000	.0003	.000	.004	.0000	.0349
AS	.0002	.0011	.003	.014	.0233	.1297
SE	.0004	.0004	.005	.005	.0465	.0629
BR	.0000	.0006	.000	.008	.0000	.0698
RB	.0003	.0007	.004	.009	.0349	.0874
SR	.0007	.0008	.009	.010	.0815	.1190
Y	.0000	.0009	.000	.012	.0000	.1047
ZR	.0019	.0023	.024	.029	.2211	.3347
MO	.0002	.0045	.003	.058	.0233	.5241
PD	.0023	.0029	.029	.037	.2676	.4160
AG	.0029	.0038	.037	.049	.3375	.5382
CD	.0000	.0052	.000	.067	.0000	.6051
IN	.0000	.0055	.000	.070	.0000	.6400
SN	.0136	.0070	.174	.090	1.5825	1.6533
SB	.0000	.0123	.000	.157	.0000	1.4313
BA	.0858	.0530	1.098	.678	9.9840	10.9734
LA	.0885	.0557	1.133	.713	10.2982	11.3867
HG	.0009	.0010	.012	.013	.1047	.1503
PB	.0000	.0020	.000	.026	.0000	.2327

Table 3-11. Metals Filter Analyses March 12, 1990 Site 1

295/01-005 PROTOCOL: 5 SA

SAMPLE ID: MZ158
PARTICLE SIZE: C
ANALYSIS ID: MZ158
03/18/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 24.-- 10. MICROGRAMS

ELEMENT	UG/CM2		UG/FILTER		PERCENT	
AL	.0000--	.0046	.000--	.059	.0000--	.2453
SI	.0015--	.0028	.019--	.036	.0800--	.1530
P	.0000--	.0032	.000--	.041	.0000--	.1707
S	.0703--	.0132	.900--	.169	3.7493--	1.7135
CL	.2072--	.0249	2.652--	.319	11.0507--	4.7921
K	.0117--	.0027	.150--	.035	.6240--	.2972
CA	.0157--	.0025	.201--	.032	.8373--	.3705
TI	.0015--	.0008	.019--	.010	.0800--	.0541
V	.0002--	.0006	.003--	.008	.0107--	.0323
CR	.0000--	.0005	.000--	.006	.0000--	.0267
MN	.0000--	.0007	.000--	.009	.0000--	.0373
FE	.0322--	.0023	.412--	.029	1.7173--	.7260
NI	.0000--	.0006	.000--	.008	.0000--	.0320
CU	.0029--	.0005	.037--	.006	.1547--	.0697
ZN	.0005--	.0004	.006--	.005	.0267--	.0241
GA	.0001--	.0003	.001--	.004	.0053--	.0162
AS	.0000--	.0012	.000--	.015	.0000--	.0640
SE	.0008--	.0005	.010--	.006	.0427--	.0320
BR	.0007--	.0006	.009--	.008	.0373--	.0356
RB	.0000--	.0008	.000--	.010	.0000--	.0427
SR	.0000--	.0009	.000--	.012	.0000--	.0480
Y	.0000--	.0010	.000--	.013	.0000--	.0533
ZR	.0000--	.0026	.000--	.033	.0000--	.1387
MO	.0000--	.0049	.000--	.063	.0000--	.2613
PD	.0000--	.0031	.000--	.040	.0000--	.1653
AG	.0017--	.0038	.022--	.049	.0907--	.2062
CD	.0000--	.0056	.000--	.072	.0000--	.2987
IN	.0080--	.0059	.102--	.076	.4267--	.3614
SN	.0057--	.0072	.073--	.092	.3040--	.4044
SB	.0000--	.0132	.000--	.169	.0000--	.7040
BA	.0099--	.0553	.127--	.708	.5280--	2.9575
LA	.0408--	.0573	.522--	.733	2.1760--	3.1877
HG	.0005--	.0011	.006--	.014	.0267--	.0597
PB	.0052--	.0021	.067--	.027	.2773--	.1609

Table 3-12. Metals Filter Analyses March 18, 1990 Site 1

295/01-005 PROTOCOL: 5 SA

SAMPLE ID: MZ159
PARTICLE SIZE: C
ANALYSIS ID: MZ159
03/24/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 29.-- 10. MICROGRAMS

ELEMENT	UG/CM2		UG/FILTER		PERCENT	
AL	.0000+-	.0046	.000+-	.059	.0000+-	.2030
SI	.0007+-	.0029	.009--	.037	.0309--	.1284
P	.0000+-	.0032	.000+-	.041	.0000+-	.1412
S	.0417+-	.0117	.534--	.150	1.8406--	.8182
CL	.2423--	.0288	3.101--	.369	10.6946--	3.9007
K	.0112+-	.0026	.143+-	.033	.4943+-	.2055
CA	.0136--	.0023	.174--	.029	.6003--	.2305
TI	.0031+-	.0008	.040--	.010	.1368+-	.0589
V	.0002--	.0005	.003--	.006	.0088--	.0223
CR	.0015--	.0006	.019+-	.008	.0662+-	.0350
MN	.0003--	.0007	.004--	.009	.0132+-	.0312
FE	.0260--	.0020	.333+-	.026	1.1476+-	.4054
NI	.0012+-	.0005	.015+-	.006	.0530--	.0286
CU	.0042--	.0006	.054+-	.008	.1854+-	.0692
ZN	.0005--	.0004	.006+-	.005	.0221+-	.0192
GA	.0006+-	.0003	.008+-	.004	.0265+-	.0161
AS	.0000+-	.0013	.000+-	.017	.0000+-	.0574
SE	.0013+-	.0005	.017--	.006	.0574+-	.0296
BR	.0000+-	.0006	.000+-	.008	.0000+-	.0265
RB	.0019+-	.0008	.024--	.010	.0839+-	.0456
SR	.0000+-	.0009	.000+-	.012	.0000+-	.0397
Y	.0000+-	.0011	.000+-	.014	.0000+-	.0486
ZR	.0044+-	.0026	.056--	.033	.1942+-	.1329
MO	.0059+-	.0049	.076+-	.063	.2604+-	.2342
PD	.0000+-	.0031	.000--	.040	.0000+-	.1368
AG	.0000+-	.0043	.000+-	.055	.0000+-	.1898
CD	.0006+-	.0056	.008+-	.072	.0265+-	.2473
IN	.0000+-	.0062	.000+-	.079	.0000+-	.2737
SN	.0000+-	.0077	.000+-	.099	.0000+-	.3399
SB	.0000+-	.0135	.000+-	.173	.0000+-	.5959
BA	.0083+-	.0578	.106+-	.740	.3663+-	2.5543
LA	.0000+-	.0581	.000+-	.744	.0000+-	2.5644
HG	.0000+-	.0011	.000+-	.014	.0000+-	.0486
PB	.0042+-	.0021	.054--	.027	.1854+-	.1126

Table 3-13. Metals Filter Analyses March 24, 1990 Site 1

295/01-005 PROTOCOL: 5 SA

SAMPLE ID: MZ160
PARTICLE SIZE: C
ANALYSIS ID: MZ160
03/30/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 27.+- 10. MICROGRAMS

ELEMENT	UG/CM2		UG/FILTER		PERCENT	
AL	.0000+-	.0044	.000--	.056	.0000+-	.2086
SI	.0003+-	.0028	.004+-	.036	.0142+-	.1328
P	.0003--	.0032	.004+-	.041	.0142--	.1518
S	.0373+-	.0114	.477+-	.146	1.7683--	.8491
CL	.1753+-	.0214	2.244+-	.274	8.3105--	3.2409
K	.0081+-	.0026	.104+-	.033	.3840--	.1882
CA	.0074--	.0019	.095+-	.024	.3508--	.1581
TI	.0003+-	.0008	.004+-	.010	.0142+-	.0383
V	.0003--	.0005	.004+-	.006	.0142--	.0243
CR	.0010+-	.0005	.013+-	.006	.0474+-	.0295
MN	.0000--	.0007	.000--	.009	.0000--	.0332
FE	.0175+-	.0016	.224+-	.020	.8296--	.3165
NI	.0007--	.0005	.009+-	.006	.0332--	.0267
CU	.0013--	.0005	.017+-	.006	.0616--	.0329
ZN	.0011--	.0004	.014+-	.005	.0521+-	.0271
GA	.0001--	.0003	.001+-	.004	.0047+-	.0143
AS	.0000+-	.0012	.000+-	.015	.0000--	.0569
SE	.0000+-	.0005	.000+-	.006	.0000+-	.0237
BR	.0000+-	.0006	.000--	.008	.0000+-	.0284
RB	.0010+-	.0008	.013--	.010	.0474+-	.0418
SR	.0004+-	.0010	.005--	.013	.0190+-	.0479
Y	.0000+-	.0011	.000+-	.014	.0000--	.0521
ZR	.0034+-	.0027	.044+-	.035	.1612+-	.1412
MO	.0000+-	.0049	.000+-	.063	.0000--	.2323
PD	.0003--	.0032	.004+-	.041	.0142+-	.1518
AG	.0000+-	.0041	.000+-	.052	.0000+-	.1944
CD	.0000+-	.0060	.000+-	.077	.0000+-	.2844
IN	.0000+-	.0061	.000+-	.078	.0000--	.2892
SN	.0000+-	.0078	.000--	.100	.0000--	.3698
SB	.0046+-	.0135	.059+-	.173	.2181--	.6451
BA	.0000+-	.0586	.000--	.750	.0000+-	2.7781
LA	.0000+-	.0607	.000+-	.777	.0000+-	2.8776
HG	.0000+-	.0010	.000--	.013	.0000--	.0474
PB	.0023--	.0021	.029+-	.027	.1090--	.1074

Table 3-14. Metals Filter Analyses March 30, 1990 Site 1

MEASUREMENT TECHNOLOGIES

8" X 10" FILTER GRAVIMETRIC REPORT

Run Day	NEA ID.	FILTER TYPE	TARE WT. GRAMS	GROSS WT. GRAMS	NET WT. MILLIGRAMS
03/06/90	MZ260	TSP	4.3216	4.3427	21.10
03/06/90	MZ261	PM-10	4.3474	4.3624	15.00
03/12/90	MZ262	TSP	4.3509	4.3760	25.10
03/12/90	MZ263	PM-10	4.3560	4.3724	16.40
03/18/90	MZ184	TSP	4.6563	4.6749	18.60
03/18/90	MZ185	PM-10	4.6268	4.6413	14.50
03/24/90	MZ186	TSP	4.6267	4.6498	23.10
03/24/90	MZ187	PM-10	4.6529	4.6685	15.60
03/30/90	MZ188	TSP	4.6023	4.6200	17.70
03/30/90	MZ189	PM-10	4.6408	4.6529	12.10

Table 3-15. Total Suspended Particulates (TSP) and Inhaleable Particulates (PM-10) Loading Monthly Summary Site 1

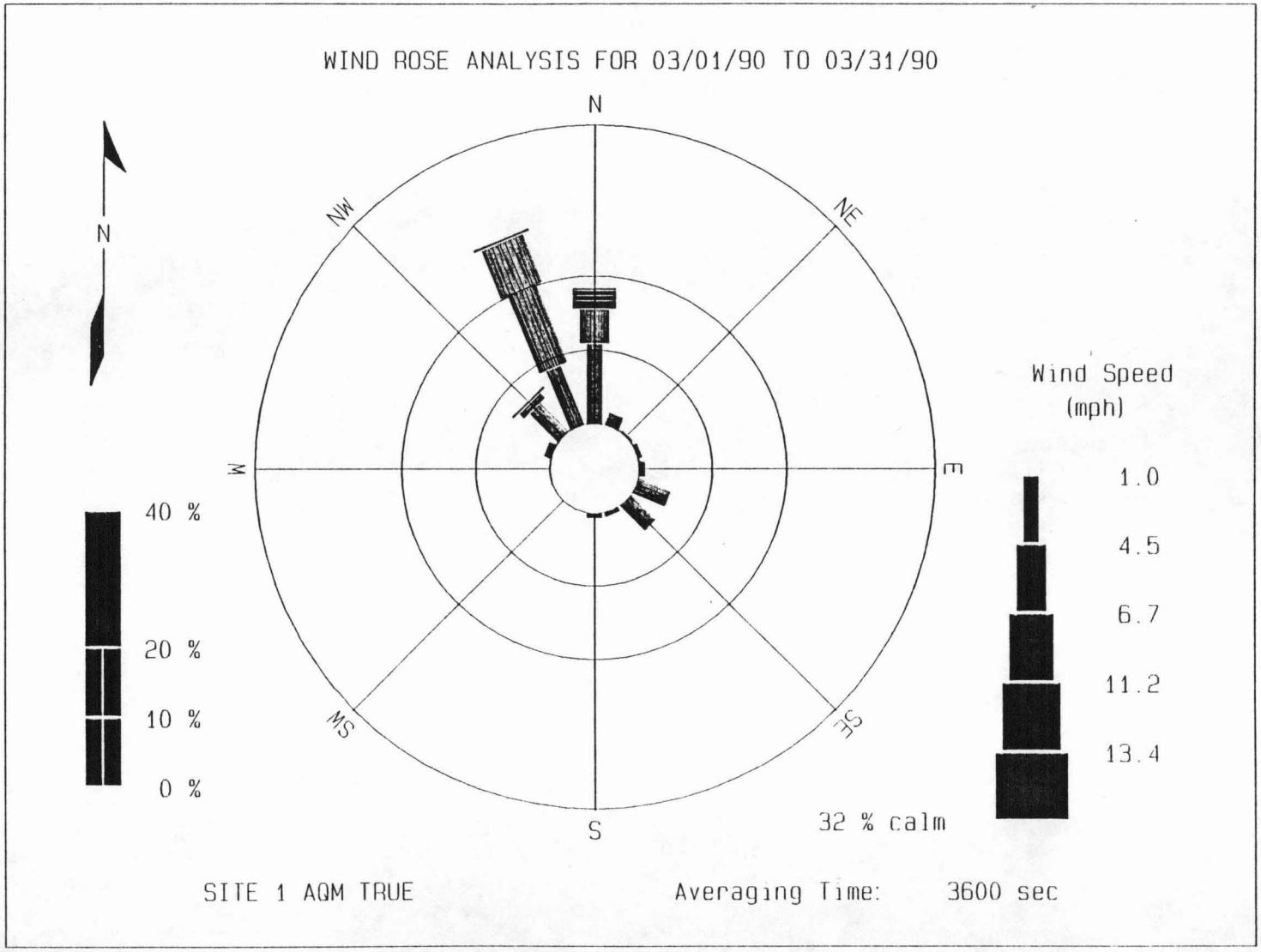

Figure 3-1. Wind Rose Analysis Site 1

WD (DEG) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	360.	03/23/90	11:00:00		
Second Highest:	359.	03/07/90	21:00:00		
Lowest Value:	0.	03/06/90	12:00:00		
Arithmetic Mean:	237.		10.000	Percentile:	9.
Standard Deviation:	127.		20.000	Percentile:	113.
			30.000	Percentile:	134.
Geometric Mean:	138.		40.000	Percentile:	256.
Standard Deviation:	5.		50.000	Percentile:	313.
			60.000	Percentile:	330.
Valid Data:	743		70.000	Percentile:	338.
Invalid Data:	1		80.000	Percentile:	345.
Missing Data:	0		90.000	Percentile:	351.
Data Recovery:	99.87%		100.000	Percentile:	360.

SITE 1 AQM TRUE Averaging Time: 3600 sec

Table 3-16. Wind Direction Summary Statistics Site 1

WS (MPH) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	13.3	03/01/90	09:00:00		
Second Highest:	12.8	03/01/90	10:00:00		
Lowest Value:	0.0	03/10/90	03:00:00		
Arithmetic Mean:	2.9		10.000	Percentile:	0.0
Standard Deviation:	2.7		20.000	Percentile:	0.2
			30.000	Percentile:	0.8
Geometric Mean:	1.8		40.000	Percentile:	1.6
Standard Deviation:	3.6		50.000	Percentile:	2.5
			60.000	Percentile:	3.3
Valid Data:	743		70.000	Percentile:	4.2
Invalid Data:	1		80.000	Percentile:	5.3
Missing Data:	0		90.000	Percentile:	6.8
Data Recovery:	99.87%		100.000	Percentile:	13.3

SITE 1 AQM TRUE Averaging Time: 3600 sec

Table 3-17. Wind Speed Summary Statistics Site 1

Sigõ1 (deg) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	120.6	03/18/90	22:00:00		
Second Highest:	118.7	03/13/90	20:00:00		
Lowest Value:	14.6	03/05/90	05:00:00		
Arithmetic Mean:	49.8			10.000 Percentile:	18.3
Standard Deviation:	26.8			20.000 Percentile:	21.8
				30.000 Percentile:	28.0
Geometric Mean:	42.4			40.000 Percentile:	35.2
Standard Deviation:	1.8			50.000 Percentile:	47.7
				60.000 Percentile:	56.4
Valid Data:	743			70.000 Percentile:	64.4
Invalid Data:	1			80.000 Percentile:	73.0
Missing Data:	0			90.000 Percentile:	88.8
Data Recovery:	99.87%			100.000 Percentile:	120.6

SITE 1 AQM TRUE Averaging Time: 3600 sec

Table 3-18. Sigma Theta Summary Statistics Site 1

TEMP (DEG F) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	76.6	03/27/90	13:00:00		
Second Highest:	76.6	03/28/90	11:00:00		
Lowest Value:	57.3	03/02/90	06:00:00		
Arithmetic Mean:	65.5			10.000 Percentile:	60.6
Standard Deviation:	4.5			20.000 Percentile:	61.9
				30.000 Percentile:	63.0
Geometric Mean:	65.4			40.000 Percentile:	63.7
Standard Deviation:	1.1			50.000 Percentile:	64.3
				60.000 Percentile:	65.3
Valid Data:	743			70.000 Percentile:	67.2
Invalid Data:	1			80.000 Percentile:	69.6
Missing Data:	0			90.000 Percentile:	72.7
Data Recovery:	99.87%			100.000 Percentile:	76.6

SITE 1 AQM TRUE Averaging Time: 3600 sec

Table 3-19 Ambient Temperature Summary Statistics Site 1

RAIN (INCH) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	0.32	03/01/90	07:00:00		
Second Highest:	0.32	03/01/90	10:00:00		
Lowest Value:	0.00	03/01/90	04:00:00		
Arithmetic Mean:	0.02			10.000 Percentile:	0.00
Standard Deviation:	0.04			20.000 Percentile:	0.00
				30.000 Percentile:	0.00
Geometric Mean:	0.00			40.000 Percentile:	0.00
Standard Deviation:	1.00			50.000 Percentile:	0.00
				60.000 Percentile:	0.00
Valid Data:	743			70.000 Percentile:	0.00
Invalid Data:	1			80.000 Percentile:	0.02
Missing Data:	0			90.000 Percentile:	0.05
Data Recovery:	99.87%			100.000 Percentile:	0.32

SITE 1 AQM TRUE Averaging Time: 3600 sec

Table 3-20. Precipitation Summary Statistics Site 1

SO2 (PPB) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	0.	03/01/90	00:00:00		
Second Highest:	0.	03/01/90	01:00:00		
Lowest Value:	0.	03/01/90	00:00:00		
Arithmetic Mean:	0.			10.000 Percentile:	0.
Standard Deviation:	0.			20.000 Percentile:	0.
				30.000 Percentile:	0.
Geometric Mean:	0.			40.000 Percentile:	0.
Standard Deviation:	1.			50.000 Percentile:	0.
				60.000 Percentile:	0.
Valid Data:	713			70.000 Percentile:	0.
Invalid Data:	31			80.000 Percentile:	0.
Missing Data:	0			90.000 Percentile:	0.
Data Recovery:	95.83%			100.000 Percentile:	0.

SITE 1 AQM TRUE Averaging Time: 3600 sec

Table 3-21. Sulfur Dioxide Summary Statistics Site 1

H2S (PPB) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	0.	03/01/90	00:00:00
Second Highest:	0.	03/01/90	01:00:00
Lowest Value:	0.	03/01/90	00:00:00

Arithmetic Mean:	0.	10.000 Percentile:	0.
Standard Deviation:	0.	20.000 Percentile:	0.
		30.000 Percentile:	0.
Geometric Mean:	0.	40.000 Percentile:	0.
Standard Deviation:	1.	50.000 Percentile:	0.
		60.000 Percentile:	0.
Valid Data:	740	70.000 Percentile:	0.
Invalid Data:	4	80.000 Percentile:	0.
Missing Data:	0	90.000 Percentile:	0.
Data Recovery:	99.46%	100.000 Percentile:	0.

SITE 1 AQM TRUE Averaging Time: 3600 sec

Table 3-22. Hydrogen Sulfide Summary Statistics Site 1

3.2 Meteorological Monitoring Data Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET WD (DEG) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	274	272	309	342	343	323	326	326	341	344	338	342	339	345	349	17	61	2	317	313	332	348	351	347
2	354	344	342	345	335	336	335	334	338	333	340	340	0	0	7	7	4	2	356	357	344	350	11	10
3	358	32	40	23	13	8	10	17	31	30	30	20	40	4	356	7	14	357	351	358	355	350	357	359
4	12	2	345	344	353	350	344	347	355	15	13	39	38	41	38	40	34	29	359	341	339	340	341	343
5	348	342	340	336	331	330	333	347	2	346	349	5	10	9	23	30	12	5	8	11	355	324	310	298
6	303	316	322	342	327	334	331	339	6	31	25	36	45	44	72	70	77	60	56	59	75	74	45	28
7	33	9	348	345	356	349	20	19	41	49	43	35	32	34	34	24	46	43	51	48	49	55	51	47
8	55	53	45	48	47	38	39	42	43	38	40	52	49	51	62	63	62	49	42	39	21	352	349	351
9	351	346	358	342	345	349	336	4	45	60	68	71	73	74	70	70	72	48	0	343	321	317	316	325
10	359	17	22	59	58	65	61	56	55	73	88	96	94	97	91	94	91	87	91	83	72	81	84	85
11	81	81	79	70	79	73	59	63	66	67	68	65	69	67	55	56	54	39	39	36	39	39	32	55
12	56	40	24	32	39	37	26	43	39	41	45	59	53	58	57	57	57	46	34	352	357	21	17	318
13	318	308	311	272	294	283	317	37	58	89	88	84	94	95	91	85	80	78	54	31	78	87	90	107
14	0	90	250	259	247	247	259	284	328	83	86	79	103	103	116	150	158	152	170	180	254	243	259	269
15	260	270	251	256	267	274	280	294	331	353	12	21	16	6	5	351	352	351	351	354	345	345	343	347
16	353	348	345	341	336	331	331	334	331	341	349	2	6	----	----	----	----	----	----	----	----	----	----	----
17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	92	91	89	354	334	340	309	311
24	307	321	324	305	300	303	326	29	55	58	45	72	78	81	91	102	106	100	100	0	32	341	330	309
25	309	322	316	305	263	272	295	114	117	125	121	128	141	130	122	123	111	76	90	33	85	38	277	286
26	315	327	304	336	331	325	345	355	4	44	36	38	40	37	33	33	35	25	12	353	339	339	338	336
27	336	331	332	330	338	335	334	345	359	30	45	54	62	55	51	48	50	44	25	351	357	31	8	355
28	351	338	323	337	314	308	304	306	2	30	40	24	44	42	38	32	37	20	23	29	37	23	36	28
29	39	28	20	14	14	350	342	337	344	1	3	21	11	25	20	9	12	11	345	5	9	12	348	345
30	342	348	346	338	345	342	338	345	346	355	11	13	22	22	10	10	11	360	351	348	340	344	347	342
31	343	325	338	1	340	346	348	349	5	36	43	47	46	46	40	44	39	34	16	3	346	347	346	347

Table 3-23. Wind Direction Monthly Summary Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET WS (MPH) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2.4	2.4	0.5	3.9	5.2	7.4	9.5	10.9	13.8	17.2	16.4	16.6	14.3	11.5	9.0	6.2	4.9	3.3	3.9	4.0	4.5	7.1	7.5	7.4
2	8.8	12.4	12.2	13.0	11.6	11.9	13.4	11.0	10.8	10.5	10.7	9.4	8.7	9.3	8.8	9.2	9.7	9.6	8.7	7.6	9.3	8.6	7.3	6.2
3	7.1	7.0	7.5	5.6	4.3	3.3	4.5	4.8	9.4	9.4	8.8	9.1	10.2	8.0	9.3	7.5	7.1	5.7	5.1	4.4	4.4	3.8	3.7	2.8
4	4.1	4.4	6.7	8.3	7.5	7.1	8.0	7.0	5.8	6.4	4.7	8.3	8.2	8.9	7.5	8.2	6.3	4.9	4.1	5.4	6.4	6.3	6.0	4.6
5	4.7	5.0	6.6	6.9	6.8	7.0	7.3	6.9	6.6	9.4	8.4	6.2	6.3	6.4	6.7	6.4	5.0	4.7	4.8	3.5	3.1	3.4	3.3	3.2
6	3.3	5.4	4.9	2.8	4.8	6.6	7.7	6.8	5.3	5.0	4.7	5.9	6.8	5.3	7.9	9.0	8.5	6.2	4.4	4.3	6.7	7.2	4.5	2.7
7	4.9	4.6	5.9	6.6	5.0	4.9	4.4	4.0	5.4	8.1	7.4	7.3	7.4	6.5	5.7	6.3	8.9	8.7	9.1	8.1	7.9	8.6	7.7	5.8
8	7.0	7.0	6.4	7.8	7.8	5.6	7.6	6.8	6.5	6.3	8.4	8.8	8.1	8.8	10.2	9.6	8.3	7.0	4.6	4.0	3.0	3.5	4.0	4.1
9	3.3	4.1	3.4	4.1	2.3	3.0	4.2	3.0	3.7	5.6	7.4	7.3	7.7	6.8	5.3	6.6	3.8	2.0	1.8	2.2	2.4	2.4	3.3	1.8
10	1.5	1.1	1.4	1.0	3.4	4.0	3.6	4.0	3.9	4.9	6.3	8.9	8.7	7.7	7.7	7.1	6.8	5.2	4.9	4.2	6.7	6.3	6.4	5.4
11	5.3	5.6	3.0	4.8	5.8	5.5	4.2	5.2	6.4	6.6	5.8	5.3	6.2	5.8	6.2	6.6	6.9	5.6	4.9	4.5	4.8	5.1	3.7	5.7
12	4.7	4.1	3.1	3.0	4.5	4.6	3.0	5.3	5.5	6.5	6.8	7.7	7.7	7.7	7.5	7.7	7.4	5.9	3.6	2.5	2.1	2.7	2.1	2.3
13	2.4	3.8	2.7	0.7	0.5	0.9	0.7	0.2	0.5	1.9	8.3	6.0	5.5	7.1	7.2	6.4	6.5	6.9	2.8	1.2	2.5	2.7	2.3	0.6
14	0.0	0.0	0.5	4.1	1.3	1.0	1.5	1.6	0.3	0.4	2.9	4.0	5.7	6.8	5.7	4.6	3.3	2.6	0.8	0.6	0.3	0.4	0.3	0.7
15	0.6	0.5	0.4	2.3	4.1	3.5	3.4	3.7	4.8	5.4	6.2	8.0	8.7	8.6	9.2	11.3	10.3	11.0	10.8	9.3	9.6	9.1	9.3	8.5
16	7.1	8.2	7.7	7.0	6.3	4.9	5.3	6.0	6.1	7.3	8.6	8.1	8.2	----	----	----	----	----	----	----	----	----	----	----
17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	5.8	5.0	0.7	0.7	1.1	0.8	1.9	2.1
24	2.2	0.6	1.1	2.4	2.8	1.9	1.0	0.6	3.5	5.3	4.1	5.8	7.6	7.9	8.6	7.6	6.0	5.3	1.6	0.0	0.7	0.4	0.9	1.2
25	0.3	0.3	0.9	1.2	3.6	1.8	2.1	0.6	2.9	4.0	5.4	5.8	5.9	5.4	5.5	4.7	3.2	4.0	0.3	0.8	3.2	0.8	1.7	0.6
26	0.6	0.3	2.7	2.0	5.1	3.0	2.0	2.5	2.8	4.3	4.6	6.7	6.7	7.3	7.1	7.2	7.0	6.0	3.5	4.0	5.4	5.7	6.5	6.1
27	6.0	5.8	5.7	5.2	5.2	5.3	5.5	5.4	6.1	5.8	6.9	6.8	7.4	7.5	7.8	7.9	7.7	6.9	4.0	3.8	3.8	4.1	4.1	4.8
28	3.6	4.2	3.9	2.8	4.4	4.9	5.2	4.3	3.3	4.4	5.9	6.1	6.9	7.2	7.3	7.0	7.5	6.4	6.8	5.9	6.8	6.2	6.9	7.7
29	9.0	6.7	4.9	5.6	5.3	6.3	6.3	6.6	8.2	7.2	7.1	6.9	7.8	8.5	8.1	7.6	6.7	6.4	7.7	6.0	6.4	5.7	6.4	7.2
30	8.0	6.6	7.7	8.0	7.2	7.1	7.9	7.2	7.9	8.2	8.2	8.8	9.3	9.3	9.9	9.8	8.1	7.8	8.8	7.6	7.9	7.3	5.9	6.4
31	6.8	5.2	5.8	5.0	7.9	6.6	6.0	6.2	6.2	6.6	8.6	8.2	8.0	8.4	8.3	8.7	7.5	7.0	4.8	4.9	6.5	7.0	6.2	5.1

Table 3-24. Wind Speed Monthly Summary Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET Sigθ1 (deg) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	34.4	35.3	61.9	21.4	25.1	18.7	16.9	19.3	26.3	23.0	20.7	18.7	20.7	26.2	25.2	32.3	37.9	29.7	16.9	15.7	18.3	27.3	27.6	26.7
2	31.5	22.5	22.9	22.0	17.6	17.4	17.7	16.8	17.6	18.2	20.8	23.2	35.1	32.4	35.9	34.8	34.5	33.1	32.9	32.3	23.8	27.0	33.1	34.4
3	30.8	27.8	24.5	30.9	32.9	36.1	34.5	34.8	28.9	30.6	31.2	30.7	26.3	34.1	30.9	33.5	33.0	30.0	29.7	31.8	29.2	30.8	30.3	31.9
4	34.1	31.5	24.0	24.9	29.5	27.1	21.5	25.2	30.2	30.1	34.8	24.7	23.6	22.9	24.3	23.6	23.8	26.3	33.0	26.0	19.0	23.8	24.0	24.9
5	28.7	23.7	18.7	16.9	16.5	16.1	15.9	24.1	32.5	23.1	26.0	31.7	29.2	32.4	28.6	29.3	33.7	34.8	34.2	33.9	33.3	25.6	16.0	15.4
6	25.6	14.2	15.5	25.8	15.8	18.7	16.8	18.7	31.4	29.2	33.0	29.6	24.0	25.3	21.9	19.3	18.6	21.8	25.8	26.5	31.3	21.4	23.2	26.9
7	27.6	31.4	28.6	27.4	36.3	34.5	40.0	35.7	29.6	21.3	23.0	25.7	26.2	27.4	29.1	29.7	24.1	24.1	21.5	22.0	23.5	22.5	21.9	23.5
8	20.9	22.0	22.7	21.5	20.8	29.3	23.4	20.2	21.0	24.1	21.8	20.2	22.4	22.7	21.3	21.0	21.3	20.7	21.5	21.2	25.9	29.3	29.3	31.1
9	29.7	29.1	34.0	24.6	30.3	31.5	24.7	38.5	32.5	24.3	21.2	20.9	20.9	22.7	20.5	20.2	24.3	32.9	28.9	48.1	20.8	37.4	27.3	38.2
10	41.6	56.6	56.5	69.6	22.0	22.5	19.7	18.1	25.2	22.6	22.6	23.0	21.3	23.8	22.5	21.6	22.1	22.5	26.5	25.4	21.5	21.8	21.6	22.3
11	21.0	21.3	33.4	21.8	19.7	19.7	19.9	19.0	21.0	21.0	21.3	21.0	19.8	21.4	21.5	21.6	20.4	21.4	25.7	25.1	21.4	22.5	29.6	19.9
12	23.8	23.0	31.2	29.2	26.7	25.6	33.4	23.1	26.9	24.3	21.8	21.4	23.7	22.4	23.6	21.9	21.2	22.0	28.2	26.7	30.0	29.5	26.7	18.7
13	25.4	18.1	26.9	61.3	30.0	58.3	37.1	44.1	62.4	35.5	20.4	28.0	23.2	21.9	22.7	23.2	20.7	17.2	19.7	23.4	18.2	21.2	19.1	76.4
14	****	****	****	11.2	70.8	20.5	21.3	20.9	44.1	54.9	31.8	37.9	27.5	24.7	29.5	40.8	41.8	33.5	29.7	74.1	56.9	70.1	28.0	57.1
15	****	52.2	24.9	21.9	12.6	14.3	14.6	14.8	23.8	33.1	34.6	33.3	32.6	31.9	35.3	30.1	31.5	29.5	30.7	31.8	29.7	26.5	24.6	26.4
16	29.7	29.8	25.4	24.7	21.0	18.0	18.7	20.1	21.0	22.7	30.0	33.5	33.3	----	----	----	----	----	----	----	----	----	----	----
17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	27.0	21.0	20.2	34.5	24.5	39.6	26.2	14.4
24	41.1	24.8	47.2	13.0	19.0	38.3	30.0	35.3	26.3	22.4	33.3	25.7	21.6	22.5	22.1	27.5	26.9	20.8	25.7	46.3	30.7	24.3	32.2	58.6
25	50.1	74.7	30.1	25.8	23.7	49.0	27.8	32.3	31.7	30.9	29.6	33.4	37.3	36.7	28.6	34.7	27.6	21.4	29.5	24.0	17.9	58.0	43.2	53.7
26	57.6	31.2	30.3	27.4	16.8	19.7	33.6	29.6	34.4	29.2	31.7	28.4	29.1	29.0	30.8	28.5	28.6	29.8	33.6	30.8	21.0	19.6	18.3	19.7
27	16.8	16.5	17.5	17.4	18.3	15.7	17.0	24.5	33.5	30.9	28.7	26.7	25.7	25.7	23.6	22.3	21.0	21.4	26.4	28.7	30.3	27.1	33.9	32.9
28	28.2	21.5	17.4	32.2	17.9	14.3	15.2	14.1	33.3	30.7	33.4	33.9	30.9	26.5	30.0	30.2	26.7	30.9	30.2	28.4	24.0	29.7	24.1	29.2
29	23.5	29.7	31.9	31.9	32.8	29.8	24.0	20.2	25.8	31.4	32.9	33.3	31.5	31.5	31.7	33.6	33.5	31.7	24.1	33.1	31.5	32.2	27.4	25.4
30	22.6	29.6	26.7	18.1	25.9	23.1	19.3	26.4	25.6	31.8	34.5	33.4	34.1	34.2	31.7	32.9	32.2	32.5	30.0	29.8	20.3	24.3	28.7	21.9
31	24.2	23.8	27.4	30.7	24.1	26.7	26.2	28.6	30.7	29.8	23.1	24.5	23.8	24.5	24.3	21.9	24.2	24.7	30.7	30.1	24.1	25.2	26.7	25.6

Table 3-25. Sigma Theta Monthly Summary Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET VWS (MPH) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-0.4	-0.6	0.0	0.1	0.0	0.0	-0.3	-0.1	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	0.0	-0.1	-0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0
2	-0.1	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.1	-0.2	-0.1	-0.1	-0.2	-0.3	-0.1	-0.2	-0.3	-0.3	-0.1	0.0	-0.1	-0.1	0.0	-0.1
3	0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	-0.3	0.0	0.0	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
4	0.1	0.0	0.0	-0.1	0.1	0.0	-0.1	0.0	0.0	0.1	0.0	0.0	-0.1	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.1	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	-0.1	0.0	0.0	0.0	-0.1
6	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0	-0.1	0.0	-0.3	-0.2	-0.3	-0.3	0.0	-0.2	-0.2	-0.3	0.0	0.0
7	0.0	0.1	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	-0.2	-0.2	0.0	0.0	-0.1	0.0	0.0	-0.2	-0.1	-0.4	-0.2	-0.1	-0.3	-0.2	0.0
8	-0.1	-0.2	0.0	-0.1	-0.1	-0.2	-0.1	0.0	-0.1	0.0	0.1	-0.2	-0.1	-0.1	-0.4	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.1	0.1	0.0
9	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	-0.2	-0.2	-0.3	-0.3	-0.3	-0.1	-0.3	-0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0.0	-0.2	-0.2	-0.1	-0.1
11	-0.1	-0.2	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0	-0.2
12	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	-0.1	-0.3	-0.1	-0.3	-0.1	-0.3	-0.2	-0.2	0.0	0.0	0.0	0.1	0.0	0.0
13	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	0.0	-0.2	-0.3	-0.1	-0.2	-0.2	0.0	0.0	-0.1	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	0.0	-0.1	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.1	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	0.0	-0.1	-0.3	0.1	0.1	-0.1	0.0	0.0	0.0
16	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	----	----	----	----	----	----	----	----	----	----	----
17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	-0.2	-0.1	-0.2	-0.3	-0.2	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.1
25	0.0	0.0	0.0	0.0	-0.4	-0.4	-0.1	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.1	-0.1	0.0	0.0	-0.1	0.0	-0.1	-0.1
26	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.0	-0.1	-0.3	-0.1	-0.2	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
29	0.1	-0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	-0.1	-0.2	-0.2	-0.5	0.0	0.0	0.0	0.0	0.1	0.0	-0.1	0.1	0.1	0.2
31	0.0	0.1	0.1	-0.1	0.0	0.0	0.0	0.1	0.1	-0.1	0.0	0.0	-0.1	-0.2	-0.1	-0.4	-0.1	-0.1	-0.2	0.0	0.0	0.1	0.1	0.0

Table 3-26. Vertical Wind Speed Monthly Summary Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET SIG W (DEG) DATA FOR: MAR 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.1	0.0	0.0	0.3	0.6	0.4	0.5	0.8	1.0	1.2	1.1	1.0	1.0	1.0	0.6	0.8	0.6	0.4	0.2	0.3	0.3	0.7	0.7	0.6
2	0.9	0.9	0.8	0.9	0.8	0.7	0.9	0.6	0.8	0.7	0.7	0.7	1.0	1.1	1.3	1.2	1.3	1.0	0.9	0.9	0.7	0.6	1.0	0.8
3	0.8	0.8	0.7	0.8	0.6	0.5	0.6	0.8	1.2	1.0	1.1	1.2	1.0	0.8	1.0	1.0	0.9	0.6	0.6	0.5	0.4	0.3	0.4	0.3
4	0.6	0.5	0.5	0.5	0.8	0.7	0.5	0.6	0.6	0.8	0.6	0.9	0.8	0.9	0.8	0.9	0.6	0.6	0.5	0.4	0.4	0.4	0.5	0.4
5	0.5	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.8	0.6	0.7	0.7	0.7	0.8	0.8	0.7	0.7	0.6	0.7	0.4	0.3	0.3	0.2	0.1
6	0.2	0.3	0.3	0.2	0.3	0.4	0.4	0.4	0.6	0.5	0.6	0.7	0.6	0.6	0.6	0.7	0.7	0.5	0.4	0.4	0.6	0.6	0.4	0.3
7	0.6	0.6	0.5	0.5	0.5	0.5	0.7	0.5	0.7	0.8	0.6	0.8	0.8	0.8	0.7	0.8	0.8	1.0	0.9	0.8	0.8	0.8	0.6	0.7
8	0.7	0.7	0.7	0.7	0.8	0.6	0.8	0.6	0.6	0.7	0.9	0.8	0.8	0.8	1.0	0.8	0.7	0.6	0.4	0.4	0.3	0.3	0.3	0.3
9	0.3	0.3	0.4	0.3	0.2	0.4	0.3	0.4	0.5	0.6	0.7	0.6	0.6	0.6	0.5	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10	0.2	0.2	0.3	0.2	0.4	0.4	0.3	0.4	0.5	0.4	0.5	0.8	0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.5
11	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.5
12	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.8	0.7	0.7	0.8	0.6	0.7	0.6	0.7	0.6	0.5	0.2	0.2	0.4	0.2	0.2
13	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.7	0.5	0.5	0.6	0.7	0.6	0.5	0.4	0.2	0.2	0.1	0.3	0.1	0.0
14	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.2	0.2	0.4	0.4	0.5	0.8	0.7	0.7	0.9	0.7	0.5	0.2	0.1	0.1	0.0	0.0	0.0
15	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.3	0.4	0.6	0.8	0.9	1.1	0.9	1.1	1.0	1.0	0.9	1.1	1.0	0.8	0.7	0.6	0.7
16	0.7	0.7	0.6	0.5	0.4	0.3	0.4	0.4	0.5	0.6	0.8	1.2	1.1	----	----	----	----	----	----	----	----	----	----	----
17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.6	0.4	0.1	0.1	0.1	0.2	0.1	0.1
24	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.3	0.5	0.5	0.5	0.6	0.6	0.8	0.8	0.6	0.4	0.2	0.0	0.1	0.0	0.3	0.3
25	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.0	0.8	0.7	0.7	0.4	0.3	0.1	0.1	0.2	0.3	0.2	0.0
26	0.1	0.1	0.3	0.1	0.3	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.5	0.3	0.3	0.3	0.4	0.3
27	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.5	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.8	0.7	0.7	0.5	0.4	0.4	0.5	0.5	0.5
28	0.3	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.5	0.5	0.7	0.7	0.7	0.7	0.8	0.9	0.8	0.8	0.8	0.7	0.8	0.8	0.8	1.0
29	1.0	0.9	0.7	0.8	0.8	0.6	0.5	0.5	0.5	0.8	0.8	0.9	1.0	1.1	1.2	1.0	1.0	0.9	0.6	0.8	0.9	0.8	0.5	0.5
30	0.6	0.6	0.6	0.4	0.5	0.5	0.5	0.5	0.7	0.8	1.1	1.0	1.1	1.1	1.4	1.3	1.1	1.0	0.9	0.7	0.5	0.6	0.6	0.5
31	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.9	0.8	0.8	0.8	0.7	0.8	0.7	0.5	0.7	0.5	0.5	0.4	0.4

Table 3-27. Sigma W Monthly Summary Site 2

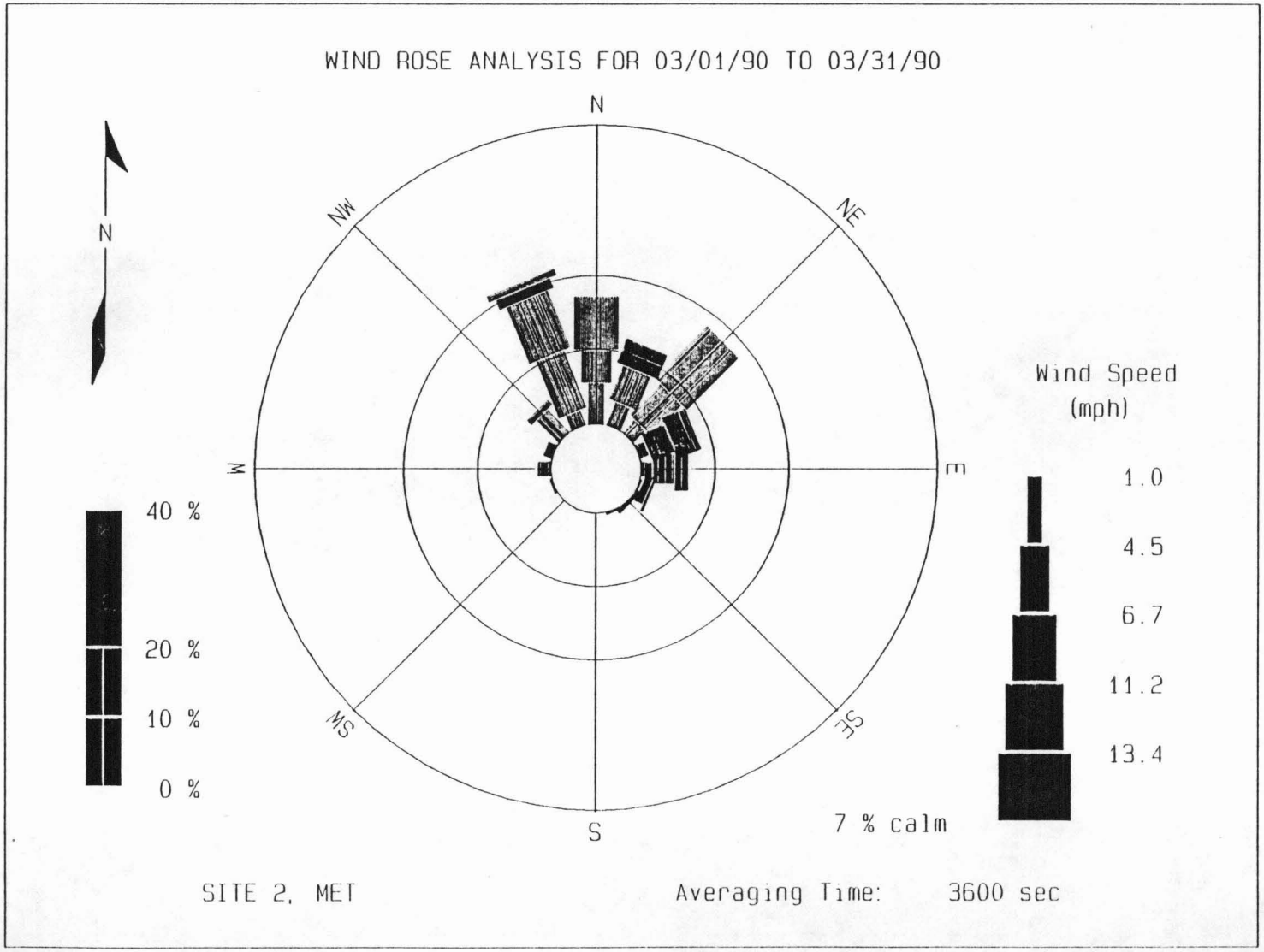

Figure 3-2. Wind Rose Analysis Site 2

WD (DEG) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	360.	03/30/90	17:00:00		
Second Highest:	359.	03/03/90	23:00:00		
Lowest Value:	0.	03/02/90	12:00:00		
Arithmetic Mean:	168.			10.000 Percentile:	13.
Standard Deviation:	143.			20.000 Percentile:	33.
				30.000 Percentile:	44.
Geometric Mean:	88.			40.000 Percentile:	59.
Standard Deviation:	4.			50.000 Percentile:	88.
				60.000 Percentile:	270.
Valid Data:	573			70.000 Percentile:	326.
Invalid Data:	0			80.000 Percentile:	341.
Missing Data:	171			90.000 Percentile:	348.
Data Recovery:	77.02%			100.000 Percentile:	360.

SITE 2, MET Averaging Time: 3600 sec

Table 3-28. Wind Direction Summary Statistics Site 2

WS (MPH) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	17.2	03/01/90	09:00:00		
Second Highest:	16.6	03/01/90	11:00:00		
Lowest Value:	0.0	03/14/90	00:00:00		
Arithmetic Mean:	5.6			10.000 Percentile:	1.7
Standard Deviation:	2.8			20.000 Percentile:	3.3
				30.000 Percentile:	4.3
Geometric Mean:	4.6			40.000 Percentile:	5.1
Standard Deviation:	2.2			50.000 Percentile:	5.9
				60.000 Percentile:	6.5
Valid Data:	573			70.000 Percentile:	7.1
Invalid Data:	0			80.000 Percentile:	7.7
Missing Data:	171			90.000 Percentile:	8.8
Data Recovery:	77.02%			100.000 Percentile:	17.2

SITE 2, MET Averaging Time: 3600 sec

Table 3-29. Wind Speed Summary Statistics Site 2

Sigõ1 (deg) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	119.2	03/14/90	02:00:00		
Second Highest:	115.9	03/14/90	01:00:00		
Lowest Value:	11.2	03/14/90	03:00:00		
Arithmetic Mean:	28.3		10.000	Percentile:	19.0
Standard Deviation:	11.4		20.000	Percentile:	21.3
			30.000	Percentile:	22.7
Geometric Mean:	26.8		40.000	Percentile:	24.3
Standard Deviation:	1.4		50.000	Percentile:	26.3
			60.000	Percentile:	29.0
Valid Data:	573		70.000	Percentile:	30.6
Invalid Data:	0		80.000	Percentile:	32.5
Missing Data:	171		90.000	Percentile:	34.8
Data Recovery:	77.02%		100.000	Percentile:	119.2

SITE 2, MET Averaging Time: 3600 sec

Table 3-30. Sigma Theta Summary Statistics Site 2

VWS (MPH) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	0.3	03/14/90	16:00:00		
Second Highest:	0.3	03/25/90	11:00:00		
Lowest Value:	-0.6	03/01/90	01:00:00		
Arithmetic Mean:	0.0		10.000	Percentile:	-0.2
Standard Deviation:	0.1		20.000	Percentile:	-0.1
			30.000	Percentile:	-0.1
Geometric Mean:	0.0		40.000	Percentile:	0.0
Standard Deviation:	1.0		50.000	Percentile:	0.0
			60.000	Percentile:	0.0
Valid Data:	573		70.000	Percentile:	0.0
Invalid Data:	0		80.000	Percentile:	0.0
Missing Data:	171		90.000	Percentile:	0.1
Data Recovery:	77.02%		100.000	Percentile:	0.3

SITE 2, MET Averaging Time: 3600 sec

Table 3-31. Vertical Wind Speed Summary Statistics Site 2

SIG W (DEG) SUMMARY STATISTICS FOR 03/01/90 - 03/31/90

Highest Value:	1.402	03/30/90	14:00:00		
Second Highest:	1.304	03/30/90	15:00:00		
Lowest Value:	0.000	03/14/90	00:00:00		
Arithmetic Mean:	0.544		10.000	Percentile:	0.158
Standard Deviation:	0.278		20.000	Percentile:	0.296
			30.000	Percentile:	0.395
Geometric Mean:	0.000		40.000	Percentile:	0.474
Standard Deviation:	1.000		50.000	Percentile:	0.533
			60.000	Percentile:	0.612
Valid Data:	573		70.000	Percentile:	0.691
Invalid Data:	0		80.000	Percentile:	0.770
Missing Data:	171		90.000	Percentile:	0.909
Data Recovery:	77.02%		100.000	Percentile:	1.402

SITE 2, MET Averaging Time: 3600 sec

Table 3-32. Sigma W Summary Statistics Site 2

MEASUREMENT TECHNOLOGIES

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